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Errors-To: ws4s@midtenn.net
Reply-To: glowbugs@theporch.com
Originator: glowbugs@theporch.com
Sender: glowbugs@theporch.com
Precedence: bulk
From: glowbugs@theporch.com
To: Multiple recipients of list <glowbugs@theporch.com>
Subject: GLOWBUGS digest 58
X-Listprocessor-Version: 6.0c -- ListProcessor by Anastasios Kotsikonas
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GLOWBUGS Digest 58

Topics covered in this issue include:

- 1) The Breadboard Lives
by EricNess@aol.com

Date: Wed, 27 Dec 1995 02:56:34 -0500
From: EricNess@aol.com
To: glowbugs@theporch.com
Subject: The Breadboard Lives
Message-ID: <951227025633_24591191@emout06.mail.aol.com>

Greeting of the season to one and all.

Being one who has been recently been bitten by the glow bug so to speak, I have found my various bench power supplies useful only for heaters or grid bias supplies. The string of 9 Volt transistor batteries I had been using were getting weak and it was time to build power supply for plate and screen voltage. The only problem was I didn't have an appropriate box/chassis.

Rather than waiting for the next swap meet to look for a chassis, I decided to build a quick and dirty supply to get me by. I had a piece of pine left over from my last wood project and decided to build a breadboard.

The whole idea of using wood as an electrical insulator doesn't sit too well with me and so I decided to make all electrical connections using terminal strips. Fortunately, terminal strips are available (and dirt cheap) surplus and I happened to have a good supply on hand. All the components were

mounted physically using wood screws but all electrical connections were isolated from the wood.

An isolation transformer, 1N4005 rectifiers, 680 uF, 200 V cap and an adjustable power resistor made up the circuit. Thanks to the needs of the computer switching power supply market, large capacity caps at voltages up to 350 Volts are readily available at reasonable prices.

After throwing everything together, I tried the supply out on the 3A4 regen receiver I built. I was extremely dissatisfied by the loud hum that swamped out all but the loudest signals. Why would there be such a hum when I had such a huge filter cap and my receiver used very little current at all (two mA max)? After trying many things unsuccessfully, I decided to bypass the rectifier diodes and that did it. The hum was gone and I had a quick and dirty power supply for my experiments.

The question I have is WHY does this work. This technique is a standard fix for broad band noise generated by linear power supplies used in computer equipment. I have done this often as part of my work but never thought much about why this works. Any theories?

Eric, WD6DGX

End of GLOWBUGS Digest 58
